CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Permit No.: IP17-000086

Date: October 17, 2017

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Janet Ferris
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of a plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on October 17, 2017 approved plans for the installation and modification of the air contamination device(s) described below:

Modification of Plan Approval No. 03163 issued on 02/5/2004 for the reactivation of the 869 Alkylation units. Modification includes the following:

- Increase the 869 Alkylation Unit daily Olefin feed rate from 7,500 barrels per day to 8,500 barrels a day. The Olefin feed rate shall remain at 2,737,500 barrels per rolling twelve month period.
- Modify Condition 9 to specify the calculation method for VOC.

This Plan Approval expires on April 17, 2019. If construction or modification has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

This Plan Approval is subject to conditions prescribed in the attachment.
This Plan Approval will supersede and replace the previous Plan Approval No. 03163 dated 02/5/2004.

_____
Edward Wiener
Chief of Source Registration
(215) 685-9426

PLAN APPROVAL PERMIT CONDITIONS
PLAN APPROVAL PERMIT NO. IP17-000086
COMPANY: PHILADELPHIA ENERGY SOLUTIONS (PES)

1. Volatile Organic compound (VOC) emission from unit 869 Alkylation plant (P662) shall not exceed 15.44 tons per rolling 12-month period [AMS Plan Approval 03163, dated 2/5/04].
2. For Unit 869 Alkylation plant, Olefin feed shall not exceed 8,500 barrels per day and 2,737,500 barrels in any 12-month rolling period.
3. For 869 Alkylation Unit P662 - Individual Drain System Requirements [40 CFR 60 Subpart QQQ]
   (a) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]
   (b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]
   (c) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]
   (d) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]
4. For 869 Alkylation Unit P662 - If the alternative is not done as per 40 CFR 60.693-1 then the following standards for individual drain systems shall take place:
   (a) Each drain shall be equipped with water seal controls. [40 CFR 60.692-2(a)(1)]
   (b) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls. [40 CFR 60.692-2(a)(2)]
   (c) Except as provided in 40 CFR 60.692-2(a)(4), each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions. [40 CFR 60.692-2(a)(3)]
   (d) As an alternative to the requirements in 40 CFR 60.692-2(a)(3), if the Permittee elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed. [40 CFR 60.692-2(a)(4)]
   (e) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(a)(5)]
   (f) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter. [40 CFR 60.692-2(b)(1)]
   (g) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. [40 CFR 60.692-2(b)(2)]
   (h) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge. [40 CFR 60.692-2(b)(3)]

(i) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(b)(4)]

(j) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.692-2(c)(1)]

(k) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.692-2(c)(2)]

(l) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(c)(3)]

(m) Except as provided in 40 CFR 60.692-2(e), each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section. [40 CFR 60.692-2(d)]

(n) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin. [40 CFR 60.692-2(e)]

5. For 869 Alkylation Unit P662 - Sewer Lines.

(a) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]

(b) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]

(c) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]

6. For 869 Alkylation Unit P662 - Access doors and other openings

(a) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions. [40 CFR 60.693-2(a)(5)(i)]

(b) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-2(a)(5)(ii)]

(c) The Permittee must notify the EPA Administrator and AMS in the report required by 40 CFR 60.7 that they have elected to construct and operate a floating roof. [40 CFR 60.693-2(b). This permit condition assures compliance with 25 Pa Code 129.55(a)(2)]

(d) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof

meeting the requirements of 40 CFR 60.692-3(a) shall be installed. [40 CFR 60.693-2(c). This permit condition assures compliance with 25 Pa Code 129.55(a)(1)]

(e) Except as provided in 40 CFR 60.693-2(c), if a Permittee elects to comply with the provisions of 40 CFR 60.693-2, then the Permittee does not need to comply with the provisions of 40 CFR 60.692-3 or 40 CFR 60.694 applicable to the same facilities. [40 CFR 60.693-2(d)]

(f) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator and AMS which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

7. Gas components routed to a flare shall go to a flare that conforms to HAP control requirements under 40 CFR §63.11(b).

Monitoring Requirements

8. The Permittee shall monitor the following:

(a) The Permittee shall monitor VOC emissions from 869 Alkylation plant. EPA's Emissions Estimation Protocol for Petroleum Refineries, Table 2.2 "Methodology Rank 2 for equipment leaks'' shall be used to calculate the VOC emission from the unit.

(b) The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.

Recordkeeping Requirements

9. The Permittee shall keep the following records:

(a) VOC emission calculations to show compliance with Condition 1. [AMS Plan Approval 03163, dated 2/5/04].

(b) Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Condition 2. [AMS Plan Approval 03163, dated 2/5/04].

(c) For sewer lines subject to 40 CFR 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.693-1(e) when a problem is identified that could result in VOC emissions. [40 CFR 60.697(b)(3)]

(d) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]

(e) Delay of Repair

(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]

(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]

(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]

(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]

(f) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]

(g) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]

(i) Detailed schematics and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]

(h) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]

Reporting Requirements

10. The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]
11. A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]
12. If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]
13. The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]
14. All records shall be kept for a minimum period of 5 years and produced upon request by AMS.